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Food and Agriculture Outlook to 1985: THE U.S. AND INDIANA



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Introduction

This publication is designed to provide information useful to Indiana farmers and others interested in Indiana agriculture. It does so by estimating ranges of probable levels of key economic variables and their direct or indirect effects on returns to farming. It is stressed that these are not predictions of exactly what will occur over the next few years. Rather, they are estimates of likely events. These estimates are based upon careful consideration of past events, current events, and expectations about the future as viewed from 1978.

This is one of two reports dealing with the long-run outlook for the U.S. and Indiana's Food and Agriculture. This publication focuses only on the results of the outlook effort. It provides little explanation of how the outlook was derived. The companion paper^{1/} goes into somewhat greater detail in analyzing factors affecting the outlook.

Clearly, many factors will influence returns on agricultural investments between now and 1985. The performance of the U.S. economy in general will have much to do with the cost of agricultural inputs and therefore supply conditions. The domestic demand for food and food products is also dependent upon the performance of the economy. For this reason, part one of the circular discusses the general economic outlook for the United States.

Farming activity draws heavily upon non-farm produced inputs. The outlook for input supplies and prices is addressed in part two.

Increasingly, the performance of the U.S. economy, and particularly the demand for agricultural products, is affected by the world economy and world food demand. During the

last decade, U.S. agriculture has been directly influenced by major changes in world food supply and demand conditions. Accordingly, parts three and four deal with the outlook for domestic demand for and supply of agricultural products and world market conditions.

Public policy toward food production in the U.S. will clearly affect supply and demand conditions and therefore prices. Public policy has been and will be based upon estimates of both domestic and world supply and demand conditions. Thus, part five discusses government farm programs against the background of expected domestic and international market conditions. Part six deals with the specific outlook for Indiana agriculture.

The General Economy

The outlook for Indiana agriculture will be affected significantly by the general performance of the U.S. economy. The general price level, the rate of economic growth, interest rates, and employment levels will affect the cost and availability of farm inputs such as land, labor, credit, fertilizers, chemicals, and machinery. The demand for food and therefore the prices of farm products also depend largely upon the strength of the general economy.

Inflation is expected to continue at substantially higher rates than those experienced during the 1950's and early 1960's. During most of that period, the annual rates of increase in the consumer price index typically ranged from 1 to 2 percent. Between now and 1985, we expect average annual increases in the consumer price index to range from 4 to 8 percent. Rates higher or lower than this range may occur for brief periods. (The impacts of different rates of price increases are illustrated in the appendix.)

^{1/} "Factors Affecting the Outlook for Food and Agriculture to 1985," pending publication by the Indiana Agricultural Experiment Station.

The real annual rate of growth in goods and services produced (real Gross National Product) will likely range from 2 to 4 percent. This is somewhat slower growth than that seen during the 1960's and early 70's. When inflation is added to the real growth rate we get the annual change in the "nominal" or money value of goods and services produced. Nominal GNP is expected to grow at about 8 to 11 percent annually. Such growth was typical in the early 1970's but is higher than that which occurred in the 1960's.

Real growth in the economy adds to the purchasing power of consumers and means that, assuming other factors constant, the demand for food will continue to grow through 1985.

Long term interest rates are expected to range from 8 to 12 percent while short term rates will range from 7 to 15 percent. As long as the rate of inflation continues at the 4 to 8 percent rate, lenders will be inclined to maintain or even raise long term rates of 9 percent or more. High long and short term rates will continue to make capital investment costly for farmers.

Unemployment rates will probably remain around 6.0 to 7 percent through 1980 and drop off slightly during the early 1980's. Even then, unemployment rates will be higher than the 3 to 5 percent rates observed from 1950 to 1974. Federal spending, designed in part to counter these relatively high unemployment rates, is likely to continue to spur the inflationary pressures mentioned above.

Input Supplies and Prices

The average cost of inputs used in farming will probably rise at a pace slightly below the rate of inflation in the general economy.

Natural and L. P. gas prices are expected to rise at annual rates of 10 percent or more through 1981. For the remainder of the outlook period the rates of increase will likely slow to the 6 to 8 percent range. Supplies

are expected to be adequate for normal use, but localized shortages could accompany especially cold weather or heavy grain drying requirements.

Petroleum supplies will be adequate to meet demand considering annual price rises for gasoline and diesel fuel of 4 to 6 percent which are expected through the early 1980's. Rates of price increase will be greater as we move toward 1985.

Nitrogen fertilizer prices will likely rise at rates lower than the general rate of inflation through 1981. Nitrogen supplies will be ample because of substantial ongoing investments in fertilizer production capacity. But low industry returns will slow expansion of the nitrogen fertilizer industry and could result in tighter supplies and higher rates of price increase by 1985.

The supply of potassium fertilizers will be adequate to keep price increases around the general level of inflation. Phosphate fertilizers will be available in amounts adequate for the increased rate of use but price increases will be slightly higher than for other types of fertilizers.

Pesticides will be in adequate supply and prices will rise at or slightly less than the rate of inflation in general.

Machinery prices are expected to rise at annual rates of 4 to 8 percent. Other terms of trade such as discounts and trade-in allowances will vary with demand.

Farm land prices are likely to continue rising in real terms. By 1985 we will likely look back over the period and see average annual increases of 5 to 12 percent, or 1 to 4 percent in real terms. But large deviations from domestic and foreign crop production trends could result in price changes well outside of this range in one or more years. Increases in land rental rates are expected to stay close to the rate of inflation in general. In any case, they tend to rise slower than

land prices.

The cost of borrowing will continue to rise rapidly as it has since the late 1960's. If the rate of inflation continues at the upper end of the anticipated 4 to 8 percent range, long term interest rates will range from 8 to 12 percent.

The cost of hired labor will likely rise slightly faster than the rate of inflation during the next several years. This is due in part to the effect of rising social security taxes and costs of unemployment insurance. As these increases are absorbed, farm wage rate increases will drop back to the rate of inflation.

Domestic Supply and Demand for Food

The rate of food consumption by domestic buyers will grow by about 1.1 to 1.4 percent annually over the next 8 years. The population will grow at about .8 percent per year. The expected real income growth rate of around 2 to 4 percent will add from .36 to .72 percent to the rate of growth in food consumption.^{2/} Consumption rates for some foods will grow faster than for others, however.

Meat consumption will move from its current annual level of almost 230 pounds per capita to as much as 260 pounds per capita by 1985. While beef and veal will comprise about one-half of all domestic meat consumption, rates of growth in pork and particularly poultry consumption will be higher than either beef or veal.

Per capita consumption of fluid milk and milk products will drop from 1975 levels of 546 pounds to around 515 pounds per capita. Egg consumption will be fairly constant at around 275 per capita as will citrus and non-citrus fruit consumption at about 210 pounds.

Vegetable consumption, on the other hand, is expected to grow from its 1975 level of 223 per capita to around 244 pounds by 1985.

Domestic production of meat is expected to grow at rates inadequate to satisfy domestic consumption given constant prices. Imports of meat will grow to meet this shortfall. Their share of the domestic market may rise.

Livestock expansion through 1985 will require an increase in the production of feed grains. Corn production is expected to rise from the 1975 level of 5,767 million bushels to around 7,400 million bushels in 1985. This increase will result both from greater acreage and yields of 105 to 110 bushels per acre.

Soybean production will rise from 1,521 million bushels (1975) to about 2.1 billion bushels in 1985. Increased acreage and yields of around 30 to 32 bushels per acre will foster this growth in production.

Wheat production will drop slightly even though yield increases of around 18 percent are anticipated. In some areas, acreage formerly allocated to wheat will switch to corn and soybeans.

World Market Conditions

The physical volume of U.S. agricultural exports is expected to trend upward at an average rate of 3 to 5 percent annually. But the rate of growth could vary substantially from year to year, possibly exceeding the 3 to 5 percent bounds. The fastest rates of growth are expected for corn and soybeans. Wheat exports are likely to expand at a more modest pace.

While increased agricultural exports are anticipated, the rate of growth for individual commodities will probably be unstable. The

^{2/} When income rises by 1 percent, food consumption rises by about .18 percent.

uncertainty created by world weather patterns as well as the emergence of state trading are likely to generate year to year variations in export growth.

Although the Centrally Planned Economies and a few developing countries may make large purchases from time to time, the largest and most dependable markets for U. S. agricultural exports, especially food and feed grains and soybeans, will continue to be Japan and the European Community.

Per capita world food supplies are expected to increase about 1 percent per year. However, serious regional food deficits could occur in parts of Asia, Africa, and Latin America.

Greater emphasis will be given to developmental assistance and internationally held grain reserves to help the low income countries. U. S. food aid will continue to be a small share of total U. S. agricultural exports.

Domestic Food and Agricultural Policy

The general framework within which U. S. food and agriculture policy is implemented is not expected to change between now and 1985. Regardless of which political party is in power, farm programs will likely continue to include provisions for: target prices, loan rates, flexible supply control and government subsidized storage programs. All are designed, in part, to maintain a band around farm prices.

If average prices received by farmers fall below target prices for a specified period of time, farmers who participate in commodity programs will receive federal payments in the amount of the difference between market and target prices times the amount of production authorized for program participants. Target prices are an income support mechanism.

Loan levels establish a rate per bushel or

pound which the government will lend farmers to hold a commodity in storage. The effect of the loan is to put a floor under prices. However, market prices can drop below the loan rate depending upon harvest and storage conditions and upon the extent of participation in government programs.

A set-aside provision can be used by the Secretary to exercise some control over supply in the event that stocks are determined to be excessive and/or prices become depressed.

A farmer-held reserve, designed to withhold grain from the market during prolonged periods of heavy production and low prices is a fourth major component of the policy framework. Grain may enter the reserve after it has been covered by a nonrecourse loan or enter the reserve directly if the Secretary so decides. Once in the reserve it cannot be released for at least 3 years without penalty to the producer unless the market price of the commodity reaches a specified ratio to the loan rate.

While these components of the policy framework are likely to persist through the period, their impact can be affected significantly through discretionary actions by the Secretary. Among the options open to the Secretary are: adjustment of the loan rate, the use of a set aside program and early access for farmers to the reserve program. Likewise, the Secretary can offer incentives for putting grain into the reserve.

Different Secretaries of Agriculture will make different choices within their set of options. Nevertheless, all will be concerned about maintaining a competitive position for the U. S. in world trade and reducing budget costs created by deficiency payments required to fill any gap between target and market prices. At the same time they will feel pressure to maintain prices which support farm income.

For these reasons, any Secretary will have incentives to maintain loan rates (price

supports) at or below world market prices. Set aside provisions will be used sparingly and the actions of the Secretary will be affected by world weather conditions and therefore the supply and price of grain in world markets. A major crop failure in any part of the world would maintain market prices high enough to reduce or eliminate reliance on price supports and deficiency payments. Good weather which leads to rapid accumulation of world stocks of grain would put pressure on the Secretary to consider aggressive use of set-aside provisions and farmer held reserves. Even then, however, concern over potential treasury costs and the competitiveness of the U. S. in world grain markets would constrain the use of set aside and price support provisions.

Indiana Agriculture in 1985

Commercial farms will increase in size and decrease in number. As many as 5 percent of Indiana's farms will have more than 1,000 acres by 1985. Some farms of fewer than 500 acres will continue to be consolidated. In spite of this trend, many smaller farms will remain. Many of these will be operated by part-time or semiretired farmers.

About 90 percent of the state's cash receipts from farming will be generated by 30 percent (about 25,000) of Indiana farms. As of 1974, the largest 30 percent of farms generated less than 80 percent of cash receipts from farming.

The trend for farmers to depend more on nonfarm produced inputs, along with rising land values and greater acreages per farm will lead to continued growth in credit requirements per farm. Access to capital markets will, therefore, continue to be important to Indiana farmers.

In Indiana there will be a continued shift from wheat and oat acreage to greater planting of corn and soybeans. By 1985 about 80 percent of tillable Indiana cropland will probably be in corn and soybeans. This com-

pares with about 70 percent from 1975 to 1977. Increasingly, wheat acreage in the southern two-thirds of the state will be followed by a soybean double crop.

Corn and soybean yields in Indiana are both expected to rise at rates faster than those for the U. S. as a whole. By 1985, average Indiana corn yields of about 118 bushels per acre and soybean yields of about 40 bushels per acre along with increased corn and soybean acreage will foster a moderate gain in Indiana's share of U. S. corn and soybean production.

By 1985, hog marketings will grow to around 6.5 million head as compared with the 1975-77 average of 5.9 million head. These hogs will be marketed from fewer, larger producing units. Growth in hog markets will be due primarily to upward movement in the hog cycle. Indiana's share of U. S. hog marketings will remain almost constant at around 7.6 percent.

Feeder calf production is likely to expand by 1985. The number of farms keeping beef cows will increase slightly as will the number of cows per herd. These tendencies will be in response to greater value of salvage feeds with higher beef prices. As a result, Indiana's share of feeder calf production will rise slightly.

Cattle feeding is expected to increase as well, although the feeding will take place on fewer, larger lots. While feeding activity will increase, the total number of cattle fed annually in Indiana will fall short of the 468,000 marketed during the 1965 to 1967 period.

Dairy farms will also decline in number but the number of cows per herd will increase. Average milk production per cow will rise from the current level of fewer than 11,000 pounds to about 13,000 pounds by 1985, but Indiana's share of total U. S. milk production will drop from 1.9 to around 1.6 percent.

Sheep numbers will continue to drop slightly through 1985. But Indiana's share of U. S. sheep production was about 1.3 percent in 1975 and will rise slightly to near 1.4 percent of the U. S. total over the next 8 years.

Indiana's production of broilers, turkeys, and laying hens is expected to rise by about 7, 14 and 1 percent, respectively. But the state's share of U. S. production in each case will remain almost constant.

The Bottom Line: Farm Income

In real terms, income on the average Indiana farm will fall below the peaks of 1973-75. But it is expected to be higher than farm income in the 1960's or in 1977. Returns to labor for average farms will continue to be below returns to labor in other segments of the economy. But persons operating larger, well-managed, commercial farms may earn more than their nonfarm counterparts.

Appendix

Dollar Values of Selected Goods Under

Assumptions of 6 and 8 Percent Price Increases

Much of the outlook developed in this paper related to annual rates of rise in prices. The following table illustrates the meaning in dollar terms of two different rates of price increase in selected agricultural inputs and products. It is stressed that these are not predictions of prices to come but illustrations of the dollar impact of 6 and 8 percent price increases through 1985.

Prices in 1985 under assumptions of 6 and 8 percent price increases

Year	Corn		Tractors		Farmland	
	6% Annually	8% Annually	6% Annually	8% Annually	6% Annually	8% Annually
1978	2.10	2.10	25,000	25,000	2,100	2,100
1985	3.16	3.60	37,590	42,846	3,158	3,599

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